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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/262,781 03/04/99 SINGER

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EXAMINER

TM21/0329

CHOATE HALL & STEWART
EXCHANGE PLACE
53 STATE STREET
BOSTON MA 02109-2891

ART UNIT, C

PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/262,781

Applicant(s)
Singer et al.

Examiner
Chun Cao

Group Art Unit
2182



☒ Responsive to communication(s) filed on Mar 4, 1999 and Mar 15, 2001

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 148-151, 156, 159-161, 164, 167, and 187-192 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 148, 149, 156, 159-161, 164, 167, and 187-192 is/are rejected.

☒ Claim(s) 150 and 151 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4,8,15

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

1. Claims 148-151, 156, 159-161, 164, 167 and 187-192 are present for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

3. Claims 188, 191 and 192 are rejected under 35 U.S.C. 102(e) as being anticipated by Rowan, US Patent No. 5,986,426.
4. Rowan teaches a first controller for controlling one of the seek time [controlling the VCM 128] and noise level [electric noise from spindle motor 102 and VCM 128 , col. 3, lines 44-45, col. 6, lines 54-58 and acoustic noise from spindle motor, col. 6, lines 22-25], altering the settings for at least one of the seek time and the noise level [col. 7, lines 6 - 22, col. 11, lines 35 - 55.]; and altering the seek trajectory by shaping input signals to the data storage device [col. 11, lines 63 - 67]. “[A] value stored within the control register 218 merely indicates whether acoustic reduction is to be provided”, col. 11, lines 37-40. Inherently, the value stored in the control register is under the control of the user.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 148-149, 156, 159-161, 164, 167, 187, 188, 189, and 190 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rowan, U.S. Patent No. 5,986,426 and Koizumi et al., U.S. Patent No. 5,982,570.
7. As per claims 148, 149, 167 and 188, Rowan uses the value stored in the control register 218 to control whether the system should be in the acoustic noise reduction mode [see paragraph 3, supra]. However, Rowan does not explicitly teach the detail in changing the value stored in the control register 218. In other words, Rowan does not explicitly teach the detail to change the operating mode of the data storage system.
8. Koizumi et al teach another data storage system having a quick mode and quiet mode. Specifically, Koizumi et al teach a GUI for allowing the user to select the operation mode [quick mode and silent mode, col. 17, lines 49-50] of the data storage system [col. 18, lines 18-25].
9. It would have been obvious to one of ordinary skill in the art to combine the teachings of Rowan and Koizumi et al because they both teach a data storage device having two different modes and Koizumi et al teach the specific that is missing in Rowan - the details in changing the operating mode of a data storage device.

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10. As per claims 156, 159-160 and 190, Rowan discloses a discrete values which are selectable to alter the noise level and the seek time of the data storage device [col. 7, lines 24-31; col. 8, lines 54-67].

11. As per claims 161 and 187, Koizumi and Rowan together teach the claimed system of changing the operating mode of a data storage system. Therefore, Koizumi and Rowan together teach the claimed method steps for changing the operating mode of a data storage system.

12. As per claims 164 and 167, Koizumi and Rowan together teach the claimed system of changing the operating mode of a data storage system. Therefore, Koizumi and Rowan together teach the claimed computer readable medium for changing the operating mode of a data storage system.

13. Claims 191 and 192 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhang et al, patent no. 6,038,096.

14. Zhang et al teach a first controller for controlling one of the seek time [controlling the VCM] and noise level [col. 11, lines 28-31], altering the settings for at least one of the seek time and the noise level [col. 10, lines 42-43, 48-49]; and altering the seek trajectory by shaping input signals to the data storage device [col. 10, lines 54-61, col. 11, lines 26-32].

15. Claims 148-149, 156, 159-161, 164, 167 and 187 - 190 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koizumi et al., U.S. Patent No. 5,982,570 and Zhang et al, patent no. 6,038,096.

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16. Koizumi et al teach a data storage system having a GUI which allows the user to select between the quick mode or quiet mode [see paragraph 8, supra]. Koizumi et al do not teach the shaping of the input signal to the data storage system to reduce the noise thereof. Koizumi et al reduce the spindle speed to achieve the quiet mode. An ordinary skill in the art would have recognized that Koizumi et al's acoustic noise solution is imperfect, i.e. while it reduces the acoustic noise and the power consumption, it also reduces the access speed thereby reducing the performance of the data storage system. A routineer in the art would have motivated to look for other teachings which would reduce the acoustic noise and the power consumption without reducing the access time.

17. Zhang et al teach another data storage system which reduces the acoustic noise and power consumption without reducing the access time [col. 11, lines 15 - 32]. Zhang et al shape the input signal to the data storage to reduce the noise and power consumption without reducing the access time [col. 10, line 35 - col. 11, line 19]. It would have been obvious to one of ordinary skill in the art to combine the teachings of Koizumi et al and Zhang et al because they both teach a data storage device which reduces acoustic noise and power consumption and Zhang et al's specific technique of acoustic noise and power consumption reduction would allow Koizumi et al's user to select a quick mode and quiet mode without reducing the access time.

18. As per claims 156, 159-160 and 190, Zhang et al discloses a discrete values which are selectable to alter the noise level and the seek time of the data storage device [col. 12, lines 45-51].

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19. As per claims 161 and 187, Koizumi and Zhang et al together teach the claimed system of changing the operating mode of a data storage system. Therefore, Koizumi and Zhang et al together teach the claimed method steps for changing the operating mode of a data storage system.

20. As per claims 164, and 167, Koizumi and Zhang et al together teach the claimed system of changing the operating mode of a data storage system. Therefore, Koizumi and Zhang et al together teach the claimed computer readable medium for changing the operating mode of a data storage system.

Allowable Subject Matter

21. Claims 150-151 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

23. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

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Or:

(703) 306-5404 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

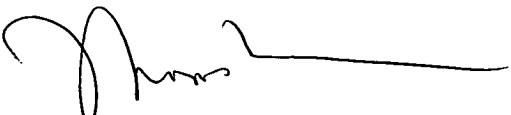
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chun Cao at (703)308-6106. The examiner can normally be reached on Monday-Friday from 7:30 am - 4:00 pm. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor Thomas Lee can be reached at (703)305-9717. The fax number for this Art Unit is (703) 308-9051.

25. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)305-9600.

Chun Cao

Mar. 26, 2001


THOMAS LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100